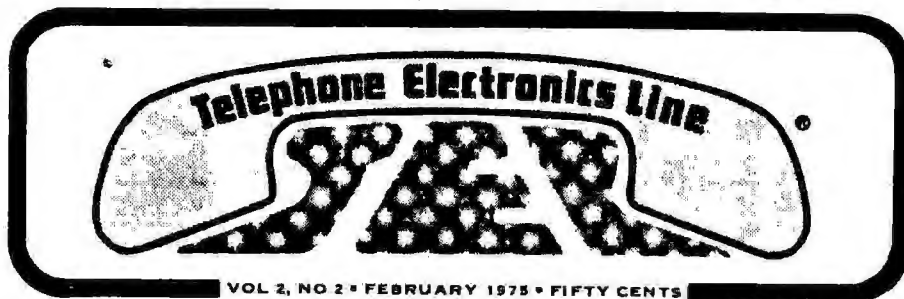


// LEARN WHAT THOSE LITTLE  
CODE NUMBERS AT THE TOP OF  
YOUR TELEPHONE BILL MEAN  
TO YOU.

// HOW ARE YOU SO SURE THAT  
YOU WILL GET A DIAL TONE  
EVERY TIME YOU PICK UP THE  
TELEPHONE HANDSET?



Isn't it a pity  
when no one's at home...  
...in such a large city  
to answer their phone-



Telephone Electronics Line



Published Monthly

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**The Old TEL**

We continue to grow with your support. In fact, we'll be expanding in volume 25% by next issue. In addition, you will enjoy following the multi-color diagrams, and larger cleaner type. We ask that you become an agent for TEL and sell a subscription to someone you know!



If it's TEL, it's swell!

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_

STATE \_\_\_\_\_

ZIP \_\_\_\_\_

Page 2

Telephone Electronics Line

# TAD TELEPHONE ANSWERING/RECORDING DEVICES

BY FRED BLECHMAN

This is a fast world we're in today, and the telephone is an essential part of business and social life. A missed call can cause a small businessman to lose a large order. A housewife could miss a social appointment change. A salesman could miss contact with an important prospect. A professional could lose a client.

The Telephone Answering Device (TAD) answers your phone when it rings and let's the caller hear your programmed message. Just as the caller hears YOUR voice, you hear HIS. You receive the message he leaves, first hand, and can judge his frame of mind as accurately as if you were actually talking with him. You hear ALL he says, and exactly WHAT he says, with no third person involved.

Small businessmen, salesmen, professional men, busy housewives and scores of others depend on the telephone. The TAD fills in when you step out by automatically taking the messages, orders or appointments that would otherwise be missed. For the small businessman, the TAD may save the expense of secretarial help or prevent loss of business and prestige when the telephone goes unanswered. Calls from salesmen, distributors or customers can be answered automatically, and accurately, any time of the day or night.

For the professional, reliable and accurate messages mean good relations with patients or clients and proper handling of emergency situations. Executives, when in conference or absent from their desk, can advise the caller of later availability. Salesmen can accept orders when out "prospecting". Housewives can route important calls to a neighbors phone or check messages and return calls immediately after shopping or dropping off the children at school.

Young people can schedule social appointments without waiting at home for a call. In short, a TAD can be an asset to anyone who has a telephone - 24 hours a day, 7 days a week, without complaint, vacation, coffee breaks, or errors!

## ANSWERING SERVICES

"Yeah", you say, "but how about a Telephone Answering Service?" An Answering SERVICE is an operator who takes messages and repeats it to you when you call back. The problems with this, however, are the "human" element. The message repeated back to you can be incomplete or incorrect - it's amazing how much can get lost in the "translation"! Also, a busy operator keeps the caller or subscriber waiting while she handles other calls at her switchboard. And, who wants to leave a personal or complicated message with an operator? The TAD repeats the EXACT message, with the voice and emphasis of the caller. Not only that, but a TAD will usually pay for itself within a year as compared to the monthly cost of an Answering Service.

## COMPARISON CHART

Okay, let's say that now you're convinced you can't live any longer without a Telephone Answering Device. How do you find out about them? Where can you get them, and how much do they cost? What are some of the features that are really worth something, and what "features" are just "window dressing"? Well, to solve your dilemma, we've provided an in-depth Comparison



Chart that shows the details of 25 units.....and to help you understand the chart, we're going to discuss each column briefly:

#### COLUMN 1

**Manufacturer or Distributor:** Write here for more information, and the location of your local distributor. For any unit selling above \$250, you should ask for a demonstration. On less expensive units the profit is often too low to allow direct selling, so they are usually sold by mail, with a guarantee of satisfaction.

#### COLUMN 2

**Model Name & Number:** Sometimes you'll find identical machines under different names. For example, the Ansaphone 540 (no longer available from Dictaphone, except from existing inventories) has shown up more recently (with improvements) as the Sanyo Answer Man and the Code-A-Phone Model 360. Also, model changes occur frequently; since the Chart was drawn up, Phone-Mate 400 to a Phone-Mate 400s, with a switch to disable the monitor, an improvement at no extra cost. So watch for model changes.

#### COLUMN 3

**Suggested Retail Price:** The prices shown are those furnished by the sources listed. However, prices vary around the country, especially on the higher-priced units, where there may be some room for bargaining with the salesman - he may be willing to give up some of his commission to make the sale on the spot.

#### COLUMN 4

**Maximum Outgoing Message:** This could be very important to you. Under normal conditions of use, 18-30 seconds is plenty of time for you to tell the caller, in your voice and words, that you are not in, and to leave a message. But you may want this unit to give a sales pitch, recite your business hours, give a message-of-the-day, redirect calls to where you'll be at certain times,

announce a schedule or menu, or any of a thousand uses that might take several minutes.

#### COLUMN 5

**Variable Length Outgoing Message:** Here, again, it depends on your intended use. A fixed outgoing message time is usually fine; but variable length gives you a lot more flexibility. With variable length your incoming message can start immediately at the end of your outgoing message, as long as it may be.

#### COLUMN 6

**Maximum Incoming Message:** If all you expect to receive is a name, phone number and short message, 24 - 30 seconds is good enough. But if you expect detailed information, long orders, dictation, field reports, etc., then look for a longer incoming message.

#### COLUMN 7

**Maximum Messages:** This may confuse you but, it's based on the most messages of the shortest length. For machines that shut-off automatically after a person hangs up (see col. 8) we've used 30 seconds as the average message length, incoming. **NOTE:** Columns 5, 6, & 7 reflect manufacturer's data, which change with technology. Those machines using standard cassettes (Footnotes A&H) may have longer capability than specified if C-120 or C-180 cassettes are used. Figures shown are based on C-90 cassettes.

#### COLUMN 8

**Voice Activated:** This feature provides automatic shut-off about 12 seconds after caller stops speaking or hangs up. It allows the incoming caller to leave his whole message, instead of perhaps cutting him off, as the fixed-time units might. This might be very essential for your use.

#### COLUMN 9

**Automatic Level Control:** This boosts the volume on a soft-spoken caller, or bad connection, and cuts the volume down when it's too

strong. This is certainly a desirable feature, especially since some people are scared to death of talking to a machine, and either hang up or speak very low. Improves outgoing messages, too.

#### COLUMN 10

**Call Received Indicator:** When you return, after leaving your TAD to answer the phone, you'd like to know if there are any messages. Without some form of call indicator, all you can do is rewind the tape and play it back. With some type of indicators (light or flag), you can only tell that at least one message has been recorded, but you can't tell how many. With a tape counter, there are a certain number of digits the counter moves for each message, so you can tell the number of calls received, and you can "fast forward" to the next call on hang-ups. A call counter, of course, counts the number of calls received. The Code-A-Phone indicator is described as "an elapsed time indicator that shows the volume of calls recorded", whatever that means (probably a tape counter).

#### COLUMN 11

**Records Phone Conversations:** While some of the units can be gimmicked up to record both sides of a telephone conversation, the Chart only indicates those where the manufacturer's literature show this as a feature. In some units, a beep-tone every 15 seconds or so alerts the caller that he's being recorded, to conform to FCC regulations. This recording feature can be mighty handy for technical and legal discussions that get confused and involved. In most cases the monitor also allows group listening in this mode of operation, which lends itself to great training for telephone solicitors - everyone listens, and then the tape is played back for discussion in a training class.

#### COLUMN 12

**Remote Call-Back:** Found only on

the more expensive machines, this feature allows you to call into your TAD from any telephone in the world and hear any messages. You may also, with some units, change your outgoing message remotely. This is a luxury feature, but might be necessary for YOU.

#### COLUMN 13

**Dimensions:** "Wide" is across the front of the unit, "Deep" is the distance from front to back, and "High" is top to bottom. If desk space is an important factor, a narrow, deep unit may be best.

#### COLUMN 14

**Features and Remarks:** There are many features common to all the units shown, except as noted. They all record incoming messages, monitor through a speaker or earphone, have a silencing switch to "kill" the monitor when you want real silence, operate on regular 117 volts AC, plug directly into the phone jack (more on that further on), have variable incoming message length, and have fast-forward and fast-rewind controls. The footnotes cover other features, and are mostly self-explanatory. Note F refers to a special feature of the Phone Butler which allows it to be used as an "electronic bulletin board" for anyone in the family to leave a message for another family member on the tape.

#### OTHER QUESTIONS?

That pretty well takes care of explaining the Chart. But here are the answers to some other typical questions that might be in your mind: **What about service and guarantees?** Well, since there are many units now being offered by mail, you can always send those back for service. Keep the shipping cartons. Units purchased locally usually have a service center. It's a good idea to deal with an established firm; if in doubt check with Better Business Bureau (continued on page 12)



i would suggest trying call diverters or other local numbers that will not be discernable on your phone's billing records. The trouble with information calls and 800 - or 900 - calls is they appear on your billing record - but not the bill you receive - and hours of calls to this type of number raises suspicions. In

# LABORATORY SYNTHESIS OF DMT & DET

if you are interested, can furnish you with a blow-by-blow account of his arrest and trial, including the Teico's "secrets" techniques for detection, the Denman recorder, etc. Nothing you really didn't know, but some interesting points emerged.....

gives rise to some interesting questions. For example, if you dial some other four digits than WXYZ you get this number, if you dial some other four digits than WXYZ you get

Our magazine quite good but would appreciate more construction plans and a classified ads department where readers could exchange ideas and equipment. The good work.

Equipment wise, there are many new CMOS designs in use in this area. They draw negligible power, combine completely automatic red and blue functions and are automatically sequenced with memory storage of several numbers. All this within a case about cigarette pack size seems incredible, but I assure you they work perfectly, and circuits are available. Incidentally, a recent article appearing in one of the leading electronics trade magazines states that soon many "telex exchanges may employ message format 'discriminators' to eliminate illegal MF inputs, presumably hand keyed. The computer age is here, gentlemen — let's make it work for us!

Yours truly,  
Paul Carlson  
108 Allison  
Pittsburgh, Pa.



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Let me know if you are in need of Autovan access info.

'Green Book' currently available thru the U. N. Bookstore in N. Y. Price is quite high, even for the single volume on switching, but maybe someone with a Xerox could make this valuable info more available to those who need it. Most here have a copy of the White Book Vol. 6, and it certainly comes in handy.

Would much enjoy talking with you people sometime, what's a good number, and a good time to call? Our hats off to you all, your newsletter has a nice, alarmingly professional appearance, and we do realize the substantial effort and risks involved in its publication.

May 1975 see you prosper in a very big way.

Yours truly,  
Milo F. Foster,  
Seattle, Wn.



## Dial Tone Speed Measurement

(CONTINUED FROM PAGE 1)

one entity be assigned to one DTS Register Circuit. This is to assure optimum test results by reducing the number of entities to be tested. Also, it is of particular importance where the two entities do not have equipments that are fully and mutually compatible with the DTS Register Circuit.

### LOADING DIVISIONS: PAIRS OF T AND D REGISTERS

Arrangements permit a separate pair of T and D registers to be associated with each arc, for a maximum of 20 test lines. Or, more test lines can be assigned to a single pair of T and D registers by grouping, up to the entire 5 arcs on each selector switch (100 lines). This is done so that DTS may be measured separately for classes of service; for several loading divisions; for Dial Pulse and TONE-TO-ONE, etc., and allows 5 pairs of registers (5 Loading Divisions) on the 200-line unit.

ArCs are associated with a particular pair of T and D Registers by the setting of the rotary switches in the older versions and by flexible cross-connections in later versions. Recognize that there can be only one Loading Division on the 200-line unit must be used even though less than 100 lines are to be tested.

Of importance is that DTS may be measured separately for each class of service, or Loading Division; etc. It will be noted that the Traffic Service Observing Practice (TSOP) defines Loading Divisions and also specifies how the arcs and test lines are to be assigned from this viewpoint. Also, how the results computed and weighted are stipulated.

### BYPASSING ARCS

Any or all arcs may be completely bypassed during a study period. This avoids the loss of tests where entire arcs do not have test lines terminated. Also, it allows testing to be concentrated on selected Loading Divisions when necessary or desirable.

The skipping of an arc is affected in the older versions by setting its associated rotary switch in position 6. In the later versions, by placing the associated toggle switch in the down position. Thus, there are 5 rotary switches or 5 toggle switches for 100-line units and 10 switches for 200-line units.

### ACCURACY VS. TESTS PER HOUR

When done as the TSOP specifies, the weighted DTS of the entity is considered reliable, being based on between 850 and 1200 tests an hour depending which versions of the circuit is used and how the lines are assigned. It is important that all of the suggestions relating to obtaining the maximum number of tests possible, be followed as the number of tests has a direct bearing on the accuracy of the measurement as illustrated below.

When less than 850 tests are made in one hour, the reason will want to be determined where the tube-type timing circuit is used, this may denote the need for recalibration of timer, synchronous timer, this may indicate a malfunction of timer. It may also mean improper use of skip, dwell and/or bypassing of arcs. In any event, it means an increased sampling error.

Some indication of the loss of accuracy when less than 850

tests are made in an hour is shown by the following table of Theoretical Limits of Sampling Error, for a 90% Assurance Level:

Actual % Over 3"	Probable Range of % Over 3" Number of Tests (1 Hour)			
	200	400	600	800
1.0	2.0	1.8	1.6	1.5
	.5	.4	.3	.3
1.5	2.8	2.4	2.3	2.2
	.5	.7	.8	.9
8.0	11.2	10.3	9.9	9.6
	5.1	5.9	6.2	6.5
20.0	24.9	23.4	22.8	22.4
	15.6	16.8	17.4	17.7

Consideration will want to be given to the loss of accuracy particularly when as few as 200-400 tests are made in an hour. This is of concern when the DTS results for a small Loading Division is being reviewed. For example, in a No. 1 Cross-bar Office with three Loading Divisions as below, the measured values for Party and Coin are extremely unreliable indicators of their grade of service. However, recognize that the weighted Entity value would be satisfactory since the entire 900 tests would be reflected.

Type	TIME Busy Hour	Registration		As Measured (Approx.)	Probable Range (Approx.)
		T	D		
Ind.	10:00-11:00 AM	700	5	.7	.4 to 1.0
Party	7:00-8:00 PM	150	3	2.0	.9 to 4.0
Coin	1:30-2:30 PM	50	2	4.0	2.0 to 9.0
		900			

### INCREASING ACCURACY FOR SMALL

#### LOADING DIVISIONS

Where more accurate measurements for small loading divisions are required, this can be done by "skipping" the arcs for any loading divisions for which DTS measurements are not needed at the same time. In the above illustration, it will be noted that during the Coin B.H. of 1:30-2:30 PM, the coin class would be given the entire 900 tests. And, the results would be more accurate as below (assumes 4.0% over 3" measured in both cases):

As Measured	% Over 3"		900 Tests
	50 Tests	3.0 to 5.0	
4.0	2.0 to 9.0	3.0 to 5.0	

The improvement in accuracy is worthwhile. However, this procedure of skipping arcs is not recommended normally. This is because of the possibility of errors of setting the switches each study period causing a loss of data or the incorrect assignment of D and T Registers in the version with rotary selector switches.

The above procedure (while it does improve accuracy by reducing error due to sampling rate) in no way reduces the effects of the other three sources of measurement error listed previously.

## When the Phone Company turns a deaf ear

(Continued from page 6)

Credit rating B: Preferred customer with established credit gained by six months of service without any five-day shut-off notices. If a deposit is involved, the service rep may not upgrade an account to "B." Full two months to pay your bill. Friendly reminder (gentle acquaintance notice): Have you forgotten your payment? Followed by five-day warning (fiery red ultimatum: "Your payment hasn't arrived!").

Credit rating C: Higher classification for new customers. Purely arbitrary whether a person is put in "C" or "D." Odds are good that if you live in a "D" rating, "C" customers get 20 days to pay and a friendly reminder before the five-day warning goes out.

Credit rating D: All other new customers. They get only the five-day warning, and this comes just 16 days after the bill was originally mailed out by the phone company.

Credit rating E: Reserved for those who have had their service disconnected for nonpayment of phone bills. Five-day shut-off notice comes a scant ten days after the bill was first mailed out.

### WHAT DO YOU DO WHEN YOU GET THE FIVE-DAY SHUTOFF NOTICE?

If you receive a five-day shut-off notice, call your service rep, find out what story ready (you've been out of town, sick, etc.), and either make arrangements to pay the bill now or get a definite date when the bill will be paid. Set the date even if you can't stick to it. Giving a date shows you intend to pay and will keep your phone from being disconnected.

If you don't call, your service rep will try to reach you by phone on the sixth day after the date of the five-day notice. If there is no answer after two calls, the rep will shut off outgoing calls but still permit incoming calls. Again, call and try to make arrangements to pay. Your rep has to disconnect all service after five days of a partial disconnect, but superiors can authorize up to 15 days. Even if you drop a check in the mail immediately, call to protect yourself in case the mail delivery is slow.

If your service is totally shut off, your rep can require you to pay the total outstanding bill, a 25¢ connect charge, plus a deposit equal to twice your average monthly bill over the previous three months. Again, this can be waived if you scream loud enough.

One final warning: everything gets noted on your record. If your phone is disconnected, your credit rating is going to drop to a "D" or an "E." If you give excuses every month, the rep will catch on. It's best to pay on time when you can and have your late payments for real emergencies.

### HOLIDAYS FOR THE PHONE COMPANY

ARE HIGHLY SELECTIVE.

The phone company has special long distance rates for holidays that are much lower than weekdays. In the coming year, July 4, Labor Day, Thanksgiving, Christmas, New Year's and Washington's Birthday are all special-rate holidays. But not Columbus Day or Memorial Day, which are both holidays for phone company employees. Mother's Day or Father's Day, when people would be prone to make calls to their family.

### WHAT THE BILL DOESN'T TELL YOU

THAT IT SHOULD.

In mid-June, AT&T urged its member companies to include in their bills the time of day of long distance calls and the duration of the calls. Unfortunately, even though these changes are on Pacific Telephone's drafting boards, they have yet to be made. Thus, the actual length of your long distance calls are not noted on your bill, so there is no way you can easily check to see if you were charged for more minutes than you actually spoke. Furthermore, the time the call was made is not noted on operator-assisted calls. If there is a mysterious operator-assisted call to London on your bill, you don't have the advantage of knowing when they think the phone call was made to determine who, if anyone, actually made the call.

## HOW TO GET THE MOST OUT OF YOUR TELEPHONE

— DOLLAR WHEN YOUR SERVICE IS CONNECTED.

The phone company is able to rack up extra profit because people take phone service for granted, and even if a person wants to get the cheapest service, he or she is not provided with the information to make an intelligent decision.

For example, when you order a phone, anything you get beyond a single-listed dial phone with a short cord is going to cost you. For example: a 25-foot cord will set you back \$7.50; a touch tone phone costs an additional \$5 to install plus \$1.80 each month; even an extra listing in the directory will cost you \$4.80 a year.

If you live alone, are new to the City or don't use the phone too much, it will pay you to get a measured service.

For \$2.50, you get 30 local calls. For \$3.75 you get 60. Unlimited service runs \$5.70. With the measured service, each local call past your allotment costs you 5¢. In other words, if you make less than 54 calls a month, it pays to get the \$2.50 service; less than 100 calls, get the \$3.75 plan. If you consistently make more calls than you thought you would, you can always switch to a different service at no extra charge, but it pays to try the limited calls alternative.

### WHEN SAYING HELLO TO NEW YORK CITY COSTS ONLY EIGHT CENTS MORE THAN SAYING HELLO TO WALNUT CREEK.

Over the years, the gap between the expense of a long distance call from within the state or even within the Bay Area has narrowed to the point where it often has ceased to exist. Has narrow to a one-minute call to New York City after 11 pm will only cost 35¢, while a three-minute (or shorter) call to Walnut Creek will cost 25¢ from downtown SF.

The following chart of phone charges for direct dialing from SF to New York City illustrates the cheapest times to make out-of-state calls:

Time	First Three Min.	Each Addl. Min.
Sat. 8 am - 11 pm	70¢	20¢
Sun. 8 am - 5 pm		
M-F 5 pm - 11 pm	85¢	25¢
Sun. 5 pm - 11 pm		
Hol. 8 am - 11 pm		
M-F 8 am - 5 pm	1.45	46¢
M-F 11 pm - 8 am	35¢*	20¢
Sat., Sun., Hol.		

\* First Minute

### HOW TO GET RESULTS IF YOUR SERVICE REPRESENTATIVE TURNS A DEAF EAR.

The phone company has very set procedures but often can be made to grant exceptions if you complain clearly, loudly, and persistently. Each time your demand gets turned down, ask to speak to a superior. The higher you go, the more likely the person is to say "yes" or listen sympathetically. Above the service rep is the supervisor, then comes the manager.

If necessary, ask for the district manager, then the division manager. Ask for a personal interview with letters with carbons. If you are still turned down, ask for the president, Jerome Hull. After you talk to his secretary, your last resort is to complain to the California Public Utilities Commission. (In SF it's 557-0350). Send carbons all around.

Make threats all up the ladder: state that monopolies like Pacific Telephone have to give the customer satisfaction; mention the US government's antitrust suit; say you will oppose the rate hike like request unless you get satisfaction. Remember: complain enough and you will often get results.

## COMPARISON CHART — TELEPHONE ANSWERING / RECORDING DEVICES

1 MANUFACTURER OR DISTRIBUTOR	2 MODEL NAME & NUMBER	3 SUGGESTED RETAIL PRICE \$	4 MAXIMUM OUTGOING MESSAGE (SECONDS)	5 VARIABLE LENGTH OUTGOING MESSAGE (SECONDS)	6 MAXIMUM INCOMING MESSAGE (SECONDS)	7 MAXIMUM MESSAGES (TOTAL)	8 VOICE ACTIVATED	9 AUTO LEVEL CONTROL	10 CALL RECEIVED INDICATOR	11 RECORDS PHONE CONV.	12 REMOTE CALL- BACK	13 DIMENSIONS (INCHES)		14 FEATURES & REMARKS
												WIDE	DEEP	HIGH
ACCURATE MERCHANT, INC. 400 Madison Ave. New York, N.Y. 10017 BELITE ENTERPRISES 1000 California St. Hawthorne, Calif. 90250 BSR TOSAI LTD. Consumer Prod. Route 303 Blauvelt, N.Y. 10913	TELE-TENDER MODEL K229	140	60	YES	45	90	0	YES	NO	YES	NO	13	9	3 A B C D
	MY SECRETARY MS-1	159	20	NO	25	108	0	YES	LIGHT	NO	NO	12 1/2	10 1/4	4 1/2 A E
	PHONE BUTLER TA-1000	100	20	NO	30	30	0	YES	LIGHT	NO	NO	9	10	2% E F G
	MARK I	160	180	YES	60	EXTERNAL RECORDER	0	EXTERNAL RECORDER	EXTERNAL	NO	NO	9	10 1/4	3% External Recorder Needed to Receive Messages. Voice-Activated Unit Available at \$130.
	MARK II	219	180	YES	60	60	0	NO	NO	NO	NO	14 1/4	10 1/4	3% A B Voice-Activated/Automatic Level Control Unit Available at \$295.
CRAFT ELECTRONICS, INC. 830 Hempstead Turnpike Franklin Square, N.Y. 11010	MARK III	495	180	YES	2700	90	YES	YES	NO	NO	YES	14 1/4	10 1/4	3% A B G
	CTA-4100	100	120	YES	120	EXTERNAL RECORDER	0	EXTERNAL RECORDER	EXTERNAL	NO	NO	8 1/2	10 1/2	3% External Recorder Needed to Receive Messages; Direct Connection to Phone Line is not Required.
	CTA-4400T	240	20	NO	90	90	0	NO	TAPE COUNTER	NO	NO	10	12 3/4	3 1/4 A B C Direct Connection to Phone Line is not Required.
	CTA-4450	290	23	NO	90	90	0	YES	TAPE COUNTER	YES	NO	15 1/4	11	4 1/4 A B C D Direct Connection to Phone Line is not Required.
	ANSAPHONE 640	325	180	YES	2700	90	YES	YES	TAPE COUNTER	NO	NO	8 1/2	8 1/2	5 C H
DICTAPHONE CORP. 120 Old Post Road Rye, N.Y. 10580	ANSAPHONE 650	450	120	YES	1800	60	YES	YES	TAPE COUNTER	YES	NO	10 1/2	14	4 A B C D Question & Answer Programming Mode
	ANSAPHONE 590	695	180	YES	2400	80	YES	YES	TAPE COUNTER	YES	YES	12	12 1/2	4 D
	DORO 311	345	720	YES	3600	120	YES	YES	CALL COUNTER	YES	NO	12 1/2	11 1/2	3 1/2 A B C D I
	DORO 320	695	720	YES	3600	120	YES	YES	CALL COUNTER	YES	YES	12 1/2	11 1/2	3 1/2 A B C D I K Can be Remotely Controlled by Touch-Tone Telephone.
	CODE-A-PHONE MODEL 360	200	120	YES	120	90	0	YES	NO	NO	NO	10	12 3/4	3 1/4 A B I Appears to be Identical to Sanyo Answer Man
FORD INDUSTRIES, INC. 5001 S.E. Johnson Creek Bl. Portland, Ore. 97206	CODE-A-PHONE MODEL 525	425	18	NO	900	30	YES	YES	YES	NO	NO	14	11	5 C Three Switch-Selected Outgoing Announcements
	CODE-A-PHONE MODEL 444	650	18	NO	1200	45	YES	YES	NO	NO	YES	14 1/4	9	4 1/2 G L
	CODE-A-PHONE MODEL 560	795	18	NO	1800	60	YES	YES	YES	NO	YES	14	12	5 G J K Three Switch-Selected Outgoing Announcements
	CODE-A-PHONE MODEL 700	895	180	YES	7200	120	YES	YES	YES	NO	NO	11 1/2	14	4 1/2 B VOX Control (Tape Pauses when Speaker Pauses)
	CODE-A-PHONE MODEL 800	995	180	YES	7200	120	YES	YES	YES	NO	NO	13	14	5 E M N Q
PHONE-MATE, INC. 335 Maple Ave. Torrance, Ca. 90503	PHONE-MATE 400	140	30	NO	30	20	0	N/S	FLAG	NO	NO	9 1/2	12	3 1/2 C E N P Two Switch-Selected Outgoing Announcements
	PHONE-MATE 800	170	30	NO	30	20	0	N/S	FLAG	NO	NO	9 1/2	12	3 1/2 E N Remote Call-Back for use with Phone-Mates 400 & 800
	REMOTE- MATE	130	30	NO	30	8 PER CALL-BACK	0	N/S	FLAG	NO	YES	9 1/2	12	2% A B I Appears to be Identical to Code-A-Phone Model 360
	SANYO ANSWER MAN	259	120	YES	120	90	0	YES	NO	NO	NO	10	12 3/4	3 1/4 A B C E R
	XL-700	99	N/S	NO	N/S	60	NO	YES	NO	YES	NO	13	10 1/2	3 1/4 A B C E R
EXCEPT AS NOTED, ALL UNITS: Record Incoming Messages; Monitor Through Speaker or Earphone; Monitor Can be Silenced; Operate on 117 Volts AC; Plug Directly into Phone Jack;														
NOTES:														
N/A — Not Applicable.														
N/S — Information Not Supplied.														
A Records & Plays on Standard Cassettes.														
B Can Be Used for Dictation.														
C Earphone Used for Private Listening.														
D Allows Group Listening to Calls.														
E Incoming Message Length Fixed.														
F Family Message Center Included.														
G Fast Forward N/S.														
H Plays Standard Cassettes.														
I End of Tape Disconnect.														
J Outgoing Message can be Changed by														
L Fast Rewind N/S.														
K Accumulated Messages Can be Erased by														
M Remote Call-Back Unit.														
N Battery-Powered.														
P External Recorder for Additional Messages.														
Q Monitor Always On. R Monitor N/S.														

or Chamber of Commerce. Guarantees vary from 90 days to a year; some units are sold with a service policy for additional cost. Be sure what's included.

**Are these things legal?** Sticky question, so let me quote from the Phone Butler Manual: "The use of accessory telephone equipment is perfectly legal. However, the telephone company has the right to require you to use one of their telephone couplers - this usually involves an installation fee of about \$20 and a monthly \$4-\$5 rental. This may be required to protect their equipment, employees and to provide uniform service. You are under no obligation to inform the phone company that you have installed a telephone answerer, and you are under no obligation to rent a coupler from them unless they tell you there is trouble on your line resulting from it..... All the units described in this survey are wired directly into the phone lines, except the Crown units, which CAN be acoustically coupled. If you ask the phone company, you'll be told you must have a coupler. If you don't ask, and just do what everyone else is doing - wire in - you'll probably never be challenged.

**What if you don't have a jack to plug into?** Again, let's quote the BSR manual: "If your telephone is wired directly to a small box on the wall, and does not use a plug and jack, you may want to have the telephone company install a jack for you. To avoid the expense of the coupler, you should tell the phone company that you want one of your existing phones made "portable", with a plug and two or more jacks installed. Remember, the answering machine is perfectly legal." You can also install your own jacks with parts from electronic supply stores.

**How about multiple-line or business phones?** Most of the companies have simple adapters, at extra cost. If in doubt or confused, have your unit installed by the seller, probably at extra cost.

**What about leasing Phone Company units?** Check with your local phone company for units available, installation charges, and monthly charge. They have very reliable devices, and there is never a service charge—but you pay through the nose! When you buy a unit, you own it.

**Can you buy a TAD on credit?** The more expensive units can be leased or bought on monthly payments. Most dealers also sell on MasterCard or BankAmericard.

**Which unit is the best?** That's a loaded question. You can't go by price alone, since you must consider which features are necessary for your use. The average user would probably find the Phone Butler, at \$100, a **BEST BUY**. If more elaborate features are required, the Sanyo Answer Man (or Code-A-Phone Model 360, which is identical, with a 90 day guarantee, as opposed to the 1 year Sanyo guarantee) is a very versatile unit. The Doro 320 will do just about anything you might want - but now you're up to a \$695 unit. The best procedure is to first decide which features you **MUST** have, look over the Chart for units with these features, and send for brochures or call a local dealer. Check the Yellow Pages in your local phone book, under "Answering Machines - Automatic" you're willing to find some dealers in your area. Get the unit you like best for the money you're willing to pay. Actually, only after owning or using a unit for awhile will you **REALLY** know what you want and need!

\*

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## TELEPHONE PLANS: \$3.00 each.

### Answering Device

Automatically answers the ringing line, plays a pre-recorded announcement, takes the calling party's message and hangs up.

### "Black Box"

Device that the FBI uses to wiretap and monitor telephone conversations silently, from a remote location from the phone.

### Call Limiter

Stop those long-distance calls made by your friends! Device disconnects all long-distance calls from your telephone line.

### Central Dial Exchange

Now you can call the other end of your house on your private telephone system. Great for the office without a PBX system.

### Recorder-Actuator

Now you have the capability of recording telephone conversations automatically every time the phone is in use.

### Schematics

The basic schematics and parts lists for commonly used telephones. Includes a description of the telephone network.

### Teletink Burglar Alarm

Use the telephone line as a link to notify you when intrusion occurs. Great for babysitting purposes and remote applications.

### Automatic Dialer

Automatically dials a stored number in its magnetic memory. Takes Touch-Tone or Dial and stores hundreds of numbers.

### Call Diverter

Answers the ringing line automatically and dials a pre-recorded number to divert the original call to a remote location.

### Conference Bridge

Automatically puts your friends on a giant conference as they call in. Have three or four way calls from your home phone.

### Melodic Ringing Generator

Add harmony to your phone. This device eliminates conventional ringing and produces a melody with each ring cycle.

### Remote Control

Before you leave work, call your home and utilize this device to turn on the stove and heat your dinner. Avoids burglars too!

### Speakerphone

Enjoy hands-free conversation on the Speakerphone. Similar to Bell System type, but uses two-way transmission instead.

### Voice Scrambler

Talk and listen to your friends in the normal manner, but good luck if someone else tries to monitor the conversation.

## ELECTRONIC PLANS: \$5.00 each.

### Biofeedback Conditioner

Monitor the fluctuations that your brain produces and learn to put yourself in any mood desired. Completely harmless.

### Multifrequency Encoder Network

Control over telephone line from this pocket-size unit. Learn to manipulate your telephone and speed calling rates by 500%!

## MISC. PLANS:

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Unique twelve-sided enclosure enhances response from any speaker. Unusual design adds to any home decor. A must for the audiophile and design engineer.

### Photographic Pinhole Camera \$300.

Small, compact, easy to build camera costs only the price of the film cartridges. Plan includes proper exposure setting tables and film types that produce best results.

# THE LEGAL ASPECTS OF INTERCONNECTION

The complete reference book on the legal rights of the telephone customer. \$29.95, postpaid.

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